



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8**

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Ref: 8EPR-N

Helen Hankins, State Director
BLM Colorado State Office
2850 Youngfield Street
Lakewood, CO 80215

Dennis Gale, RMP Project Manager
Bureau of Land Management
Kremmling Field Office
2103 East Park Avenue
Kremmling, CO 80459

Re: Kremmling Field Office Draft Resource Management
Plan and Environmental Impact Statement
CEQ # 20110309

Dear Ms. Hankins and Mr. Gale:

In accordance with our responsibilities under Section 102(2)(C) of the National Environmental Policy Act (NEPA), 42 U.S.C. Section 4332(2)(C), and Section 309 of the Clean Air Act, 42 U.S.C. Section 7609, the U.S. Environmental Protection Agency Region 8 (EPA) has reviewed the Bureau of Land Management's (BLM) Kremmling Field Office Draft Resource Management Plan and Environmental Impact Statement (Draft RMP/EIS).

The EPA appreciates having had the opportunity work with the BLM prior to the public release of the Draft RMP/EIS in order to discuss the air quality analysis developed for the project. These discussions allowed us to work through a number of concerns and improve the analysis presented in the Draft RMP/EIS. The EPA remains committed to working with the BLM to further discuss these comments and seek ways to resolve our remaining concerns.

Background

The Kremmling Field Office (KFO) planning area in north central Colorado consists of approximately 3.1 million acres of land. The Draft RMP/EIS describes and analyzes four alternatives for managing approximately 379,000 acres of federal surface lands and resources and approximately 2,241,000 acres of federal mineral estate administered by the BLM. The KFO spans portions of Eagle, Grand, Routt, Jackson, Larimer, and Summit counties. The plan alternatives include: Alternative A (no action alternative), Alternative B (mixed emphasis and the agency's Preferred Alternative), Alternative C (conservation emphasis alternative) and Alternative D (resource use emphasis alternative).

Alternative B, the Preferred Alternative, provides two options for managing river segments identified as

suitable for inclusion in the National Wild and Scenic River System (NWSRS). Section 5(d)(1) of the Wild and Scenic Rivers Act (WSRA) directs Federal agencies to consider potential wild and scenic rivers when undertaking land management plans. Under Alternative B1, the BLM would find two segments of the Colorado River (Segments 4 and 5) suitable for inclusion in the NWSRS. Under Alternative B2, the BLM would defer a determination of suitability for the two Colorado River segments and recommend adoption and implementation of the Upper Colorado River Wild and Scenic Stakeholder Group Management Plan (SG Plan). The BLM has not yet identified which option will be included in the Preferred Alternative; therefore, the EPA is required to rate both.

The EPA's Comments and Recommendations

The EPA's comments included in this letter focus on the key topics of air resources, wild and scenic rivers (WSRs) and water resources. Along with an explanation of these comments, we offer recommendations on how the BLM might address them. In addition to these comments and recommendations, we have also provided the enclosed "EPA Detailed Comments," which includes additional detail pertaining to these issues as well as addresses surface water resource concerns (Attachment 1).

A. Air Quality

1. Emissions Inventory

The emissions inventory identified in the Draft RMP/EIS appears to be high, given the relatively small number of projected wells. During our discussions with the BLM prior to the release of the Draft RMP/EIS, we made this observation and recommended that BLM further review the emissions inventory including detailed suggestions for corrected/updated emissions factors. While the revisions made to the emissions inventory calculations more accurately quantify expected emissions from anticipated oil and gas development specifically in regard to decreases in anticipated nitrogen oxides (NO_x) and particulate matter (PM₁₀) emissions, we continue to believe the emissions inventory overestimates potential emissions. For example, the maximum annual NO_x and PM₁₀ emissions identified for the Preferred Alternative (page 4-20) were 449 tons per year (tpy) and 795 tpy, respectively. By comparison, the maximum annual NO_x and PM₁₀ emissions for the Colorado River Valley Field Office (CRVFO) Draft RMP/EIS Preferred Alternative (page 4-27 of the CRV Draft RMP/EIS) were 60 tpy and 66 tpy, respectively.

Furthermore, the CRV Draft RMP/EIS anticipates 2,206 wells on BLM lands in the CRVFO planning area over the next twenty years, as compared to the 192 wells anticipated on BLM lands in the KFO planning area over the same time frame. This is another reason why the KFO emissions inventory appears to be substantially high. To better address this discrepancy and improve the inventory, we recommend that additional review be conducted of the assumptions used to calculate the emission inventory presented in Appendix F of the Draft RMP/EIS. Specific recommendations include the following:

- The emissions inventory for nonroad Tier 4 engines refers to inaccurate emission factors for generator sets. Diesel engines typically used for drilling operations are normally referenced as "for all except gensets" in Table 1 of 40 CFR 1039 (2008). Emission factors presented in Tables 5.8 and 5.9 (pages F-30 and F-31) for the drill rig engines of this size (4,450 hp) are emissions typically associated with natural gas fired or diesel engines with secondary

controls such as selective catalytic reduction (SCR).

- The emissions inventory for Completion Frac Pump Engines was based on AP-42 (EPA 1996) data. We suggest, depending on the engine type, referencing an updated emission factor such as the Nonroad engine standards in 40 CFR 1039 (2008). Also, the assumption for the Frac Pump Engine Operation Duration per well of 12 hours per day for 14 days appears to be too high.
- The emissions inventory for gas-fired generators was based on AP-42 (EPA 2000) data. We recommend referencing the National Source Performance Standard (NSPS) 40 CFR 60, Subpart JJJJ (2008) for the updated emission factors for newly manufactured spark ignition engines.
- Various tables of the emission inventory have inconsistent dust control efficiencies (50 percent and 80 percent). According to the Draft RMP/EIS (page 4-18), the air quality management goal would include requiring 80 percent fugitive dust emission reduction. We recommend that the inventory tables consistently utilize 80 percent control efficiency.

Additional steps to reduce emissions could include electrifying the oil and gas field to eliminate the onsite generators, switching to newer emission standards such as Tier 4 for the various nonroad engines, and reducing overall vehicle traffic. These suggested mitigation measures are meant to ensure success of the Draft RMP/EIS goal to implement actions designed to minimize emissions that may cause, or contribute to, adverse impacts to air quality or air quality related values (AQRVs), as well as to protect Class I Airsheds affected by actions taken within the planning area (page 4-18).

2. Ozone National Ambient Air Quality Standard

The EPA recommends updating the discussion regarding review of the current ozone National Ambient Air Quality Standard (NAAQS) in the Draft RMP/EIS (page 3-2) to reflect the most recent information on EPA's plans for amending the standard. The existing discussion is not longer accurate. Specifically, we suggest the Final RMP/EIS explain that the EPA announced in the fall of 2011 that proposals for appropriate revisions to the current ozone standard of 0.075 ppm will occur in the fall of 2013, and final revisions to the standard will occur in 2014.

B. Wild and Scenic Rivers

1. Suitability Determinations for Inclusion in the National Wild and Scenic River System

The Draft RMP/EIS identified 15 BLM-managed river segments in the KFO planning area as eligible for inclusion in the NWSRS. Pursuant to BLM Manual 8351, a river segment must be free flowing and contain at least one outstandingly remarkable value (ORV) to be eligible for this designation. The BLM Manual 8351 provides the agency with specific policies for conducting WSR suitability studies within the RMP planning process. The BLM studied the 15 eligible river segments in the *Final Wild and Scenic River Suitability Report* (April 2011) to determine if they are suitable for inclusion in the NWSRS. In this study, the BLM found 13 of these 15 eligible river segments to be unsuitable for inclusion in the NWSRS, and 2 to be suitable. These river segments include:

- Blue River – Segments 2 and 3
- Colorado River – Segments 1, 2 and 3

- One segment of each of the following: Kinney Creek, Muddy Creek, North Platte River, Piney River, Rabbit Ears Creek, Spruce Creek, Sulphur Gulch and Troublesome Creek

Assuming the BLM selects its Preferred Alternative for this Draft RMP/EIS, these 13 unsuitable segments would no longer be managed to protect their free-flowing nature and ORVs. The Draft RMP/EIS does not provide a full explanation of the basis for this decision. EPA therefore recommends that the document be revised to include an explanation of the NWSRS suitability decision made for each of the eight eligible river segments, using the suitability factors outlined in BLM Manual 8351. This information will provide for full disclosure in the RMP/EIS of how BLM decided on whether or not the river segments were suitable for NWSRS.

As it stands now, Appendix C presents only a brief summary (Table ES-1, page C-3) of the suitability determination results, and only general reasons (pages C-3 and C-4) why BLM determined that certain segments are suitable. For example, the following explanations were provided:

- BLM manages only a small fraction of the lands in a stream corridor
- BLM concluded that several streams with multiple and pristine ORVs would be adequately managed under protective designations proposed in the RMP
- A high number of eligible streams have only one ORV, and the BLM determined that existing protective laws and management prescriptions in the proposed plan are the best tools for managing these values.

The EPA's recommendations above will complete this thinking and ensure it is fully disclosed.

2. *Management Options for River Segments Identified as Suitable for Inclusion in the NWSRS*

The Draft RMP/EIS should include the following information to fully disclose the difference between how BLM will manage river segments identified as suitable for inclusion in the NWSRS in Alternatives B1 and B2. The impacts analysis for Alternative B2 identifies long-term adverse impacts when compared to Alternatives A and C (page 4-723). However, no comparison to Alternative B1 is provided. From the information provided in the Draft RMP/EIS, Alternative B1 appears to be more protective of river segments that have been determined to be suitable for inclusion in the NWSRS than Alternative B2. Since the BLM did not identify whether Alternative B1 or Alternative B2 will be included in the Preferred Alternative, the EPA recommends that the Final RMP/EIS include a comparative analysis of Alternative B1 and Alternative B2 to illustrate to the reader the decision-making process leading to the selection of either of the two options.

C. Water Resources

1. *Characterization of Drinking Water Sources*

The EPA recommends that Final RMP/EIS provide additional information about sources of drinking water in the planning area to allow the reader to understand the extent and location of these important resources. The EPA suggests including a map illustrating locations of source water protection zones (both groundwater and surface water) for municipal supply to address this concern. We recommend contacting John Duggan, Source Water Assessment and Protection Program

Coordinator, at the Colorado Department of Public Health and Environment (CDPHE) at (303) 692-3534 for assistance obtaining this information.

2. Groundwater Monitoring

Monitoring is a necessary element of evaluating whether mitigation measures are protecting groundwater resources. EPA strongly recommends that the Final RMP/EIS require future project-level baseline and periodic long-term water quality monitoring of private wells located within one mile of a project area (for example, within one mile of a well pad). The BLM Pinedale Anticline project and the U.S. Forest Service Eagle Prospect project in Wyoming are examples where similar monitoring programs have been established.

Baseline groundwater monitoring may also be a useful means by which to identify the depths and extent of aquifers used or that could be used for drinking water, referred to as Underground Sources of Drinking Water (USDWs). Aquifers are presumed to be USDWs unless they have been specifically exempted or if they have been shown to fall outside the definition of a USDW (e.g., over 10,000 mg/L total dissolved solids [TDS]). We recommend that the Final RMP/EIS clarify this broad potential scope of USDW designations. We also suggest the Final RMP/EIS include a commitment that future oil and gas development project-level NEPA analyses will include monitoring plans and sampling programs that track groundwater impacts as drilling and production operations occur.

The EPA's Rating

Based on our review, the EPA is rating the Draft RMP/EIS Preferred Alternative (with either the Alternative B1 or the Alternative B2 options) as "Environmental Concerns – Insufficient Information" (EC-2). The "EC" rating means that the EPA's review has identified potential impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts. The "2" rating means that the Draft RMP/EIS does not contain sufficient information for the EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment. We have enclosed a description of the EPA's rating system for your convenience.

We appreciate the opportunity to comment on this document, and hope our suggestions for improving it assist you with preparation of the Final RMP/EIS. We would be happy to meet to discuss these comments and our suggested solutions. If you have any questions or requests, please feel free to contact either me at 303-312-6925 or David Fronczak of my staff at 303-312-6096 or by email at fronczak.david@epa.gov.

Sincerely,



Suzanne J. Bohan

Director, NEPA Compliance and Review Program
Office of Ecosystems Protection and Remediation

Enclosures (3)

ATTACHMENT 1
EPA Detailed Comments Regarding Water
KFO Draft RMP/EIS

General

The EPA recommends the addition of the following maps in the Final RMP/EIS to better inform reviewers regarding the comparison of alternatives and anticipated impacts:

- General geology map of the KFO planning area
- Map containing groundwater information, including wells and springs
- Map of municipal watershed areas and other areas protected as sources of drinking water
- Map of Clean Water Act (CWA) § 303(d) listed waters

Groundwater Resources

1. Reuse of Produced Water

The EPA encourages resource management and development decisions that support natural gas extraction and enhanced oil recovery operations, while protecting public health and the environment. Oil and gas extraction activity typically requires using large amounts of water, including freshwater. Where feasible, the EPA recommends recycling and reuse of production water to conserve drinking water resources. More frequent reuse and recycling can also provide additional public health and environmental benefits including:

- Reduced need for evaporation ponds which can:
 - Reduce the potential for ground water or surface water contamination; and
 - Reduce air emissions (odor, volatile organic compounds, and hazardous air pollutants).
- Reduced need for subsurface disposal (underground injection control (UIC) injection wells) which leads to associated energy and cost savings.

2. Additional Groundwater Comments

The RMP revision process provides the BLM with a key opportunity to protect sensitive resources through avoidance measures, including no leasing or no surface occupancy in critical areas. Source water protection is important because these essential water resources serve people who could be exposed to any contaminants in the water over a long period of time. Our specific recommendations for stipulations that BLM may need to employ to avoid and protect sensitive drinking water resources from impacts associated with certain development activity are attached (Attachment 2).

Surface Water

We suggest that the Final RMP/EIS include a table identifying existing impaired waters in the KFO planning area to more fully characterize water resources in the planning area and assist reviewers of the document in evaluating the alternatives. In addition, we recommend a map be included (similar to Figure 3.2.4-2 in the Colorado River Valley Field Office [CRVFO] Draft RMP/EIS), identifying the

locations of CWA § 303(d) streams with impaired water quality. We recommend contacting Aimee Konowal, Environmental Data Unit Manager, at the Colorado Department of Public Health and Environment (CDPHE) at 303-692-3530 for assistance obtaining this information.

To ensure full disclosure, the EPA recommends adding the State of Colorado's Integrated Water Quality Monitoring and Assessment Report under CWA § 305(b) to the list of sources of water quality information. This document, updated biennially, characterizes Colorado's water quality, identifies widespread water quality problems of significance, and describes various projects implemented to restore and protect Colorado's waters. In addition, the Colorado Statewide Water Quality Management Plan has basin-specific chapters that provide useful information about water quality and quantity. Both documents can be accessed at <http://www.cdphe.state.co.us/op/wqcc/Reports/Reports.html>.

Stipulations Applicable to Fluid Minerals Leasing

BLM proposes *Stipulation CO-NSO-5 Intermittent and Ephemeral Streams* for inclusion in Alternative C. This stipulation (Appendix B, pages B-29 and B-30) prohibits surface occupancy or use within 50 horizontal feet, as measured from the top of the stream bank, for all intermittent or ephemeral streams. If riparian vegetation exists beyond the top of the stream bank, the buffer should be measured from the extent of the riparian vegetation. The EPA recommends this stipulation be included in Alternative B and increased from 50 to 100 feet. Surface occupancy less than 100 feet from intermittent and ephemeral streams may cause adverse impacts to water quality through erosion or surface spills. Since intermittent and ephemeral streams flow downstream into existing fisheries and water supplies, this stipulation will help prevent flooding related problems, maintain and protect water quality and stream stability, and minimize sediment downstream.

BLM proposes *Stipulation CO-CSU-4 Intermittent and Ephemeral Streams* for inclusion in Alternative C. This stipulation (Appendix B, page B-42) applies from the edge of NSO buffer to 100 horizontal feet and minimizes locating roads, stream crossings and facilities within this zone (because activities within this area can potentially affect streams). The EPA recommends this stipulation be applied to Alternative B to minimize the risk of sedimentation, spills, and other contaminants reaching intermittent and/or ephemeral streams in order to protect water quality, stream function and aquatic habitat.

ATTACHMENT 2
Recommended Groundwater and Surface Water Protection Measures
KFO Draft RMP/EIS

The EPA recommends that the BLM develop lease stipulations designed specifically to protect current and future drinking water resources during this RMP revision. This will take advantage of an important opportunity to avoid and mitigate potential significant impacts to water resources within the planning area. The EPA recommends that the BLM consider requiring oil and gas operators to employ where necessary the following measures in the Final RMP/EIS to protect ground and surface waters:

- Sole Source Aquifers
 - No Leasing
- Source Water Protection Areas and Well Head Protection Areas
 - No Surface Occupancy in Municipal Watersheds
 - No Surface Occupancy in Groundwater Zones 1-3 (for example, the Uinta National Forest Oil and Gas Leasing EIS in Utah provides for No Surface Occupancy in Groundwater Zones 1-3)
 - No Surface Occupancy in Surface Water Zones 1-2 (for example, the Uinta National Forest Oil and Gas Leasing EIS in Utah provides for No Surface Occupancy in Surface Water Zones 1-2)
 - If No Surface Occupancy stipulations are not required for the zones above, impose Controlled Surface Use Stipulations within Municipal Watersheds, Ground Water Zones 1-3 and Surface Water Zones 1-3 including but not limited to:
 - Closed loop drilling systems
 - Line surface impoundment ponds (evaporation ponds or drilling pits) with synthetic liners and subsequently decommission by removing all contaminants and liner and reclaiming the area with natural vegetation
 - Identify private wells and set stipulations to be protective (e.g., no occupancy within immediate area, collect baseline data on groundwater, long-term monitoring, replacement of water supply if contaminated, etc.)
 - In leases already permitted but not drilled, impose Conditions of Approval for APDs including but not limited to the Controlled Surface Use stipulations listed above.
- For areas with unconfined shallow groundwater (as determined by viewing well logs and available U.S. Geological Survey information), and since the shallower the depth to water the more sensitive an aquifer is to contamination, consider:
 - No Surface Occupancy
 - Prohibit use of evaporation ponds in proximity to shallow aquifers
 - Review the geology of shallow aquifers to determine well construction requirements, which may include cementing to surface and drilling with a fresh water mud system
- General recommendations for standard lease stipulations/best management practices to consider:
 - A general well design requirement to set surface casing and cement to a specific formation or depth if there are underlying USDWs which warrant protection
 - Surface casing be placed to below the lowermost USDW and set into a confining (e.g., shale) layer
 - A requirement for an intermediate string of casing and cement may, where appropriate, in the event of encountering deep aquifers

- Specify in the RMP that future multiple-well oil and gas projects will need a water resource management plan to address water consumption and produced water disposal, including identifying water recycling opportunities
- Specify in the RMP that future multiple-well oil and gas projects will need a Baseline and Long-Term Water Quality Monitoring Plan (the BLM Pinedale Anticline project and the U.S. Forest Service Eagle Prospect project in Wyoming, and the BLM West Tavaputs project in Utah are examples where similar monitoring plans have been established)
- General recommendations for surface water protection:
 - No Surface Occupancy for 100-year flood plains (for example, the Grand Mesa Uncompahgre and Gunnison National Forest Oil and Gas Leasing EIS provides for No Surface Occupancy in floodplains)
 - No Surface Occupancy within 500 feet of perennial water bodies (for example, the BLM Wyoming Casper RMP provides for No Surface Occupancy within 500 feet of surface water)

ATTACHMENT 3
U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO -- Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC -- Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO -- Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU -- Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 -- Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 -- Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new, reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 -- Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.